
Welcome!

Agenda

1. Announcements (**Test on Tuesday 10/21**)
2. Check off completion of Study Guide
3. Do Now
4. Review
5. Exit Slip

Prizes for Class Dojo

- Candy
- Homework Passes
- Pens/Pencils
- Treasure Chest (Dollar Store items)
- Laptop Passes
- Free Time Passes
- Juice

Study Guide Check


Do Now

Study Guide Review

How long is the test?
How long will it take us?

- 6-8 Vocabulary Terms
- Labeling Diagrams
- Advantages and Disadvantages
- 3-4 Short Answer Questions
- 3 Graph Questions
- Approximately 1 hour (you can have more time if you need it)

Can we use our study guides or notes?

- No!
- This is a closed notes test
- I gave you a study guide so that you can STUDY

What is the test on?

- The test will cover our unit on Bridges
- Could include everything in the study guide
- You should be able to identify different types of bridges from pictures
- Best fit lines / Graphs

Will I pass the test?

- If you know the material on the study guide you will pass the test

Why are we taking this assessment?

- I need a way to determine if you have a sound understanding of the material we went over

- If you have questions during the test I will be happy to help you but I won't give you answers

How many points is the test worth?

- I will put a point value next to each test question

How much is this towards our grade?

- Tests are worth 15% of your grade

Part 1: Vocabulary and Terms

- **Compression**: Squeezing or shortening a material
- **Tension**: Stretching or lengthening a material
- **Shear force**: sliding
- **Torsion**: twisting

Part 1: Vocabulary and Terms

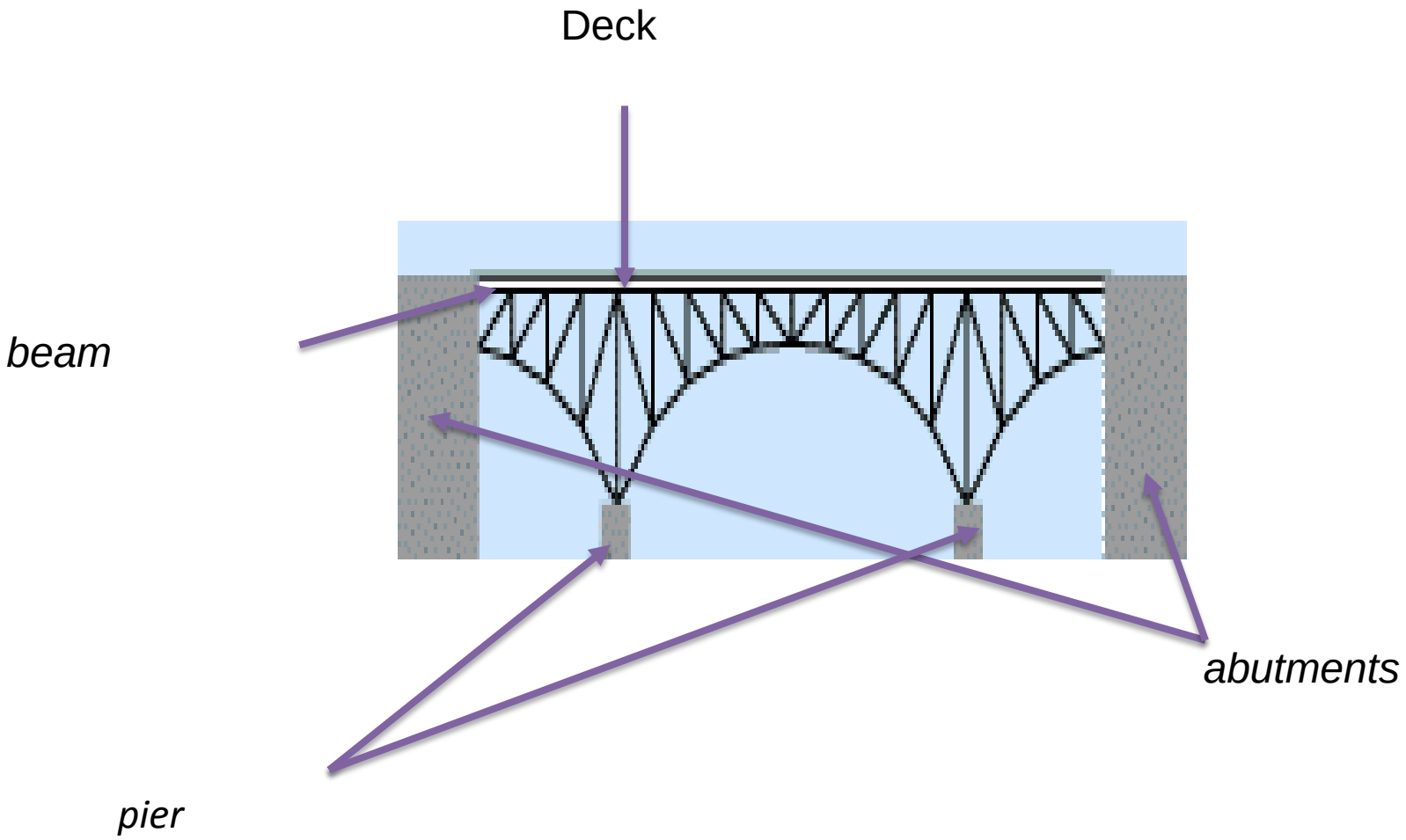
- **Buckling**: what happens when the force of compression overcomes an object's ability to handle compression

- **Snapping**: what happens when the force of tension overcomes an object's ability to handle tension

Part 1: Vocabulary and Terms

- **Deck**: the bridge surface on which traffic moves
- **Beam**: a horizontal structural element spanning two supports
- **Pier**: a heavy column or pillar which holds up a bridge
- **Abutments**: : heavy supports at the ends of a bridge, which transfer the thrust from an arch or strut to the bedrock or earth

Bridge Vocabulary



Beam Bridges

Advantages	Disadvantages

Truss Bridges

Advantages	Disadvantages

Suspension Bridges

Advantages	Disadvantages

Arch Bridges

Advantages	Disadvantages

Cable Stay Bridges

Advantages	Disadvantages

Why Bridges Fail

- Weather (flooding, wind, rain, etc.)
- Poor/wrong design
- Change in substrate
- Failing parts

Who were the first great bridge builders?
What materials were used to make the first bridges?

- Romans the first great bridge builders
  - Some still standing today
- First they were made of wood, stone or even vines – whatever was available

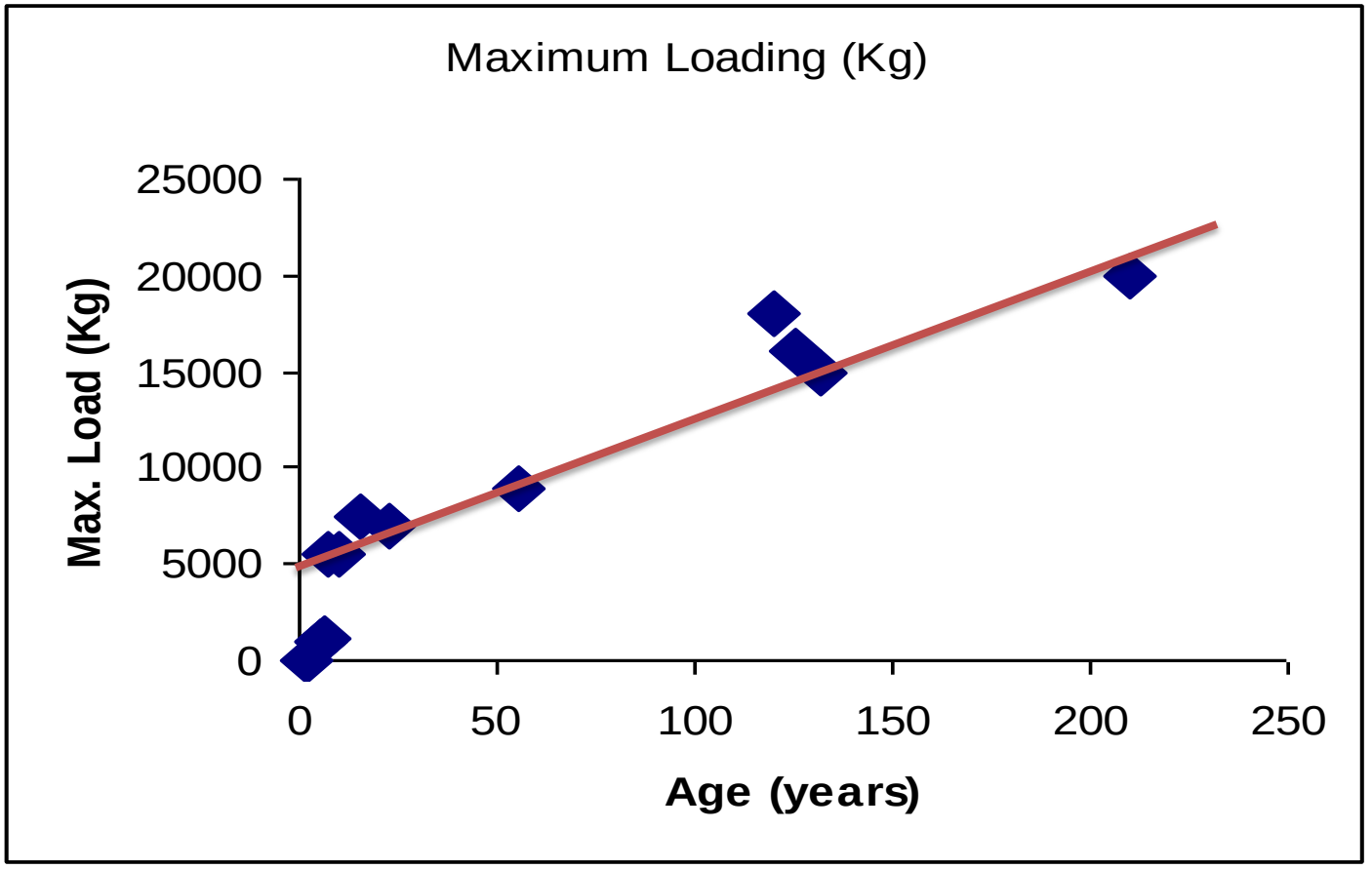
What type of engineers are responsible for bridge design? What materials do we use today to construct bridges?

- Civil Engineers

- Light weight, strong, composites

Describe the equal and opposite reaction found in arch bridges between force and support.

- For every action there is an equal and opposite reaction.
- As the force is applied to the keystone, it pushes out through the rest of the arch to the abutments and into the ground.
- The ground pushes back with an equal amount of supporting force.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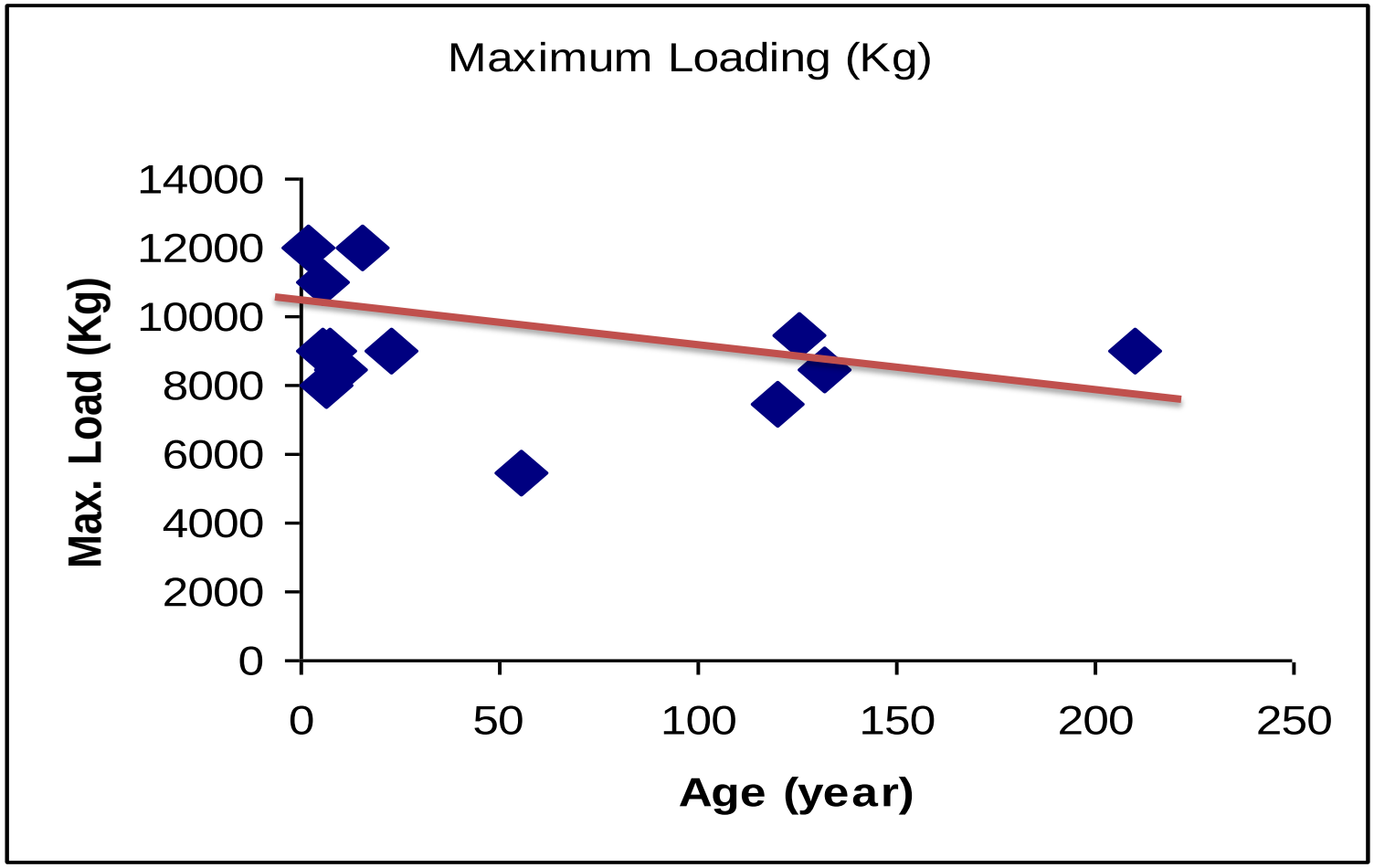
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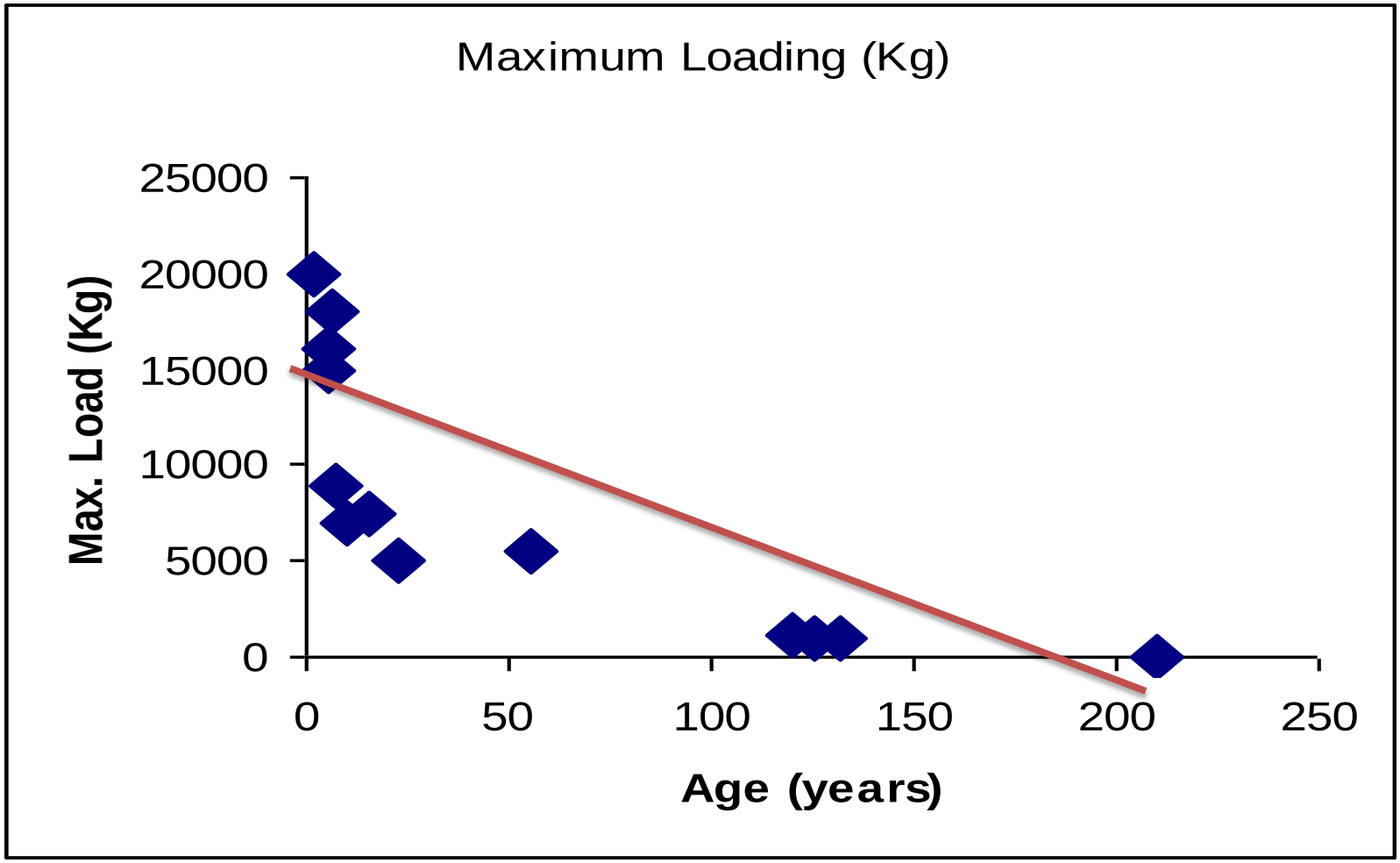
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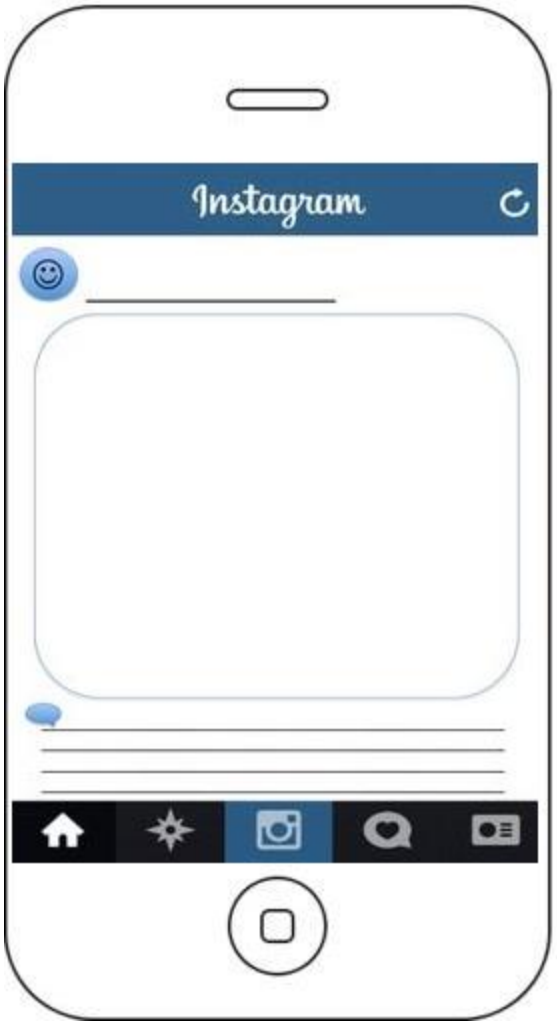
Questions?

Exit Slip



1. Write your Name on the paper
2. Create a username
3. Draw in a “selfie” of how you feel about the upcoming test
4. Write a comment, hashtag or title below your photo


Graphing Activity
for Bonus Points